

GUAM YEAR OF THE REEF 2018 NEWSLETTER

Photo: Dave Burdick

JULY 2018

Ag's FSRD efforts connect land & sea

Conserving our land-based resources protects Guam's coral reefs

On Guam, everything we do on land can impact our ocean. The goal of the ridge to reef approach is to better manage our land-based and freshwater habitats – including forests, grasslands, watersheds, rivers, and urban areas – to improve the condition of our ocean resources, especially our coral reefs. Effective management of land-based habitats also enhances the lives of community members by reducing erosion, improving water quality in streams, rivers, and the ocean, decreasing the risk of floods and fires, and making our island more beautiful.

Erosion of sediments, nutrients, and pollution from the land into our nearshore waters can smother corals, cause disease outbreaks, and increase the amount of algae growing on reefs, making less space for corals. Additionally, run-off of nutrients may cause outbreaks of the crown of thorns sea star (COTS). On healthy coral reefs, the water is usually very clear and does not contain much phytoplankton, microscopic plants that float in the water. Newly-hatched COTS eat phytoplankton, so when too many nutrients lead to increased amounts of these tiny plants, more young COTS will survive and grow into adults. One fully-grown COTS can eat up to 10 square meters of coral per year, thus COTS outbreaks can be devastating for coral reefs.

Restoring the Manell Watershed through reforestation

The Guam Department of Agriculture's Forestry and Soil Resources Division (FSRD) has been working in the Manell Watershed since 2015 to improve the condition of land-based habitats, increase quality of life for local residents, and

#GYOR2018

July's GYOR theme:

"RIDGE TO REEF"

This issue of the GYOR newsletter highlights local efforts to protect coral reefs by better managing our land-based resources.



Erosion in the Manell Watershed may damage nearby coral reefs (Photo: Pat Keeler/BSP)

We've redesigned our newsletter - let us know what you think! If you'd like to contribute an article or photos to next month's issue, contact us at GuamYOR2018@gmail.com

For more information, visit our website www.quamcoralreefs.com or like us on Facebook [@GuamYearoftheReef2018](https://www.facebook.com/GuamYearoftheReef2018)

Si Yu'os Ma'åse'!



FSRD's Christine Camacho Fejeran surveys damage during a fire in the Cotal Conservation Area in March 2016 (Photo: Pat Keeler/BSP)

protect our coral reefs from sediments, nutrients, and pollution. One of their major activities is reforesting the part of the watershed accessible from Quinene Road in Merizo. In 2015, FSRD and partners identified the site as a potential restoration area. That fall, FSRD received five acres of land from the Chamorro Land Trust for management. Currently, the restoration footprint covers 17 acres. FSRD held their first community planting event in September 2015 with students from Simon Sanchez and George Washington High Schools. Together, FSRD staff, students, and community members planted about 1,000 *Acacia auriculiformis* trees. This species was selected by foresters about 40 years ago for its ability to grow quickly in substandard soils, regenerate after fires, and restore nutrients in the soil.

Since 2015, FSRD has held annual planting events with community members each October, including participants from Southern High School, Merizo village, the University of Guam, and the military. No training is required and anyone can join in to plant trees. In October 2017, FSRD held their largest planting event to date, with about 100 participants. Now, over 4,000 acacia trees have been planted on this land, in addition to native species such as *da'ok* (laurelwood), *talisai* (local almond), *ahgao* (premna), *kafu'* (pandanus), and *iffit* (ironwood). "The long term goal is to eventually transition this area into a native forest," stated Ruddy Estoy, Forest Health Coordinator at FSRD. Key partners for this project include the Guam Department of Education, Bureau of Statistics and Plans, Department of Public Works, University of Guam, Guam Community College, US Department of Defense, and the Mayors Council of Guam.

Protecting coral reefs and Guam's communities using firebreaks

FSRD also works to prevent burning in the Manell Watershed and throughout Guam. Fires are a serious threat to Guam's habitats and its people. Burning decreases the amount of vegetation on the land, leading to erosion and runoff that threatens coral reefs. Burning also endangers people and property. FSRD installs firebreaks and maintains them with help from community members. "On Guam, our firebreaks are mowed strips about 25 feet wide that go around a site's perimeter. This effort is to reduce vegetation in the firebreak, which keeps fire from the site. This essentially buys firefighters time," said Christine Camacho Fejeran, Cooperative Fire Protection Program Manager at FSRD. Key partners in the firebreak maintenance work include the Bureau of Statistics and Plans, the Mayors Council of Guam, and private landowners who allow foresters access to their properties.

Although it varies each year based on rainfall, Guam's fire season typically starts around October and extends through June or July. FSRD and volunteers conduct firebreak maintenance approximately every other month

Community members learn to monitor coral reef health

On June 23, fourteen local residents completed training through the Friends of Reefs (FOR) Guam program and learned how to monitor coral reef health.

Participants first completed a classroom-based session where they heard about threats to Guam's reefs, such as pollution, physical impacts from recreational use, and coral bleaching.

Then, trainees grabbed masks and fins to explore the Piti Bomb Holes Marine Preserve. Once in the water, they learned how to identify and survey different types of balâte' (sea cucumbers), corals, seagrasses, and algae. After completing this training, participants are able to take part in FOR Guam's coral reef monitoring events.

For more information about FOR Guam's Community Coral Reef Monitoring Program, visit their [website](#) or [Facebook page](#).



Photo: Val Brown/NOAA



Firebreak maintenance at the Quinene Road site in May 2017 (Photo: Pat Keeler/BSP)

during fire season. Last year, through a grant from the US Department of the Interior, the Bureau of Statistics and Plans was able to pay stipends to residents of the surrounding community to assist with firebreak maintenance at Quinene Road. These stipend workers were a huge help to FSRD, as the foresters are extremely busy during this time of year. In addition to firebreak installation and maintenance and dealing with fires when they occur, foresters are also active in the nursery, propagating acacia and other species to plant once fire season has ended. Propagation begins in January. By planting time in October, the acacia seedlings are 1-2 feet tall.

Raising awareness to reduce impacts of burning

When they're not working at Quinene Road or tending plants in the nursery, FSRD foresters conduct outreach with local communities to raise awareness of the impacts of fires and encourage residents to get involved in tree planting and other watershed restoration activities. "The approach to outreach has changed in the last three years," said Fejeran. "It's more interactive now and we bring the students to the sites. They're not just watching presentations. The conversation is on fire, but it's about how fires affect the ecosystem and the watershed."

Many fires on Guam are intentional. "Causes of intentional burning include poaching activities, youth starts ('playing with fire'), and burning for the sake of burning," said Fejeran. Wildfires are also caused by escaped backyard fires, including trash burning. Education and outreach with the public is critical for reducing arson and preventing the impacts of fires on Guam's land, its coral reefs, and its people. FSRD's outreach projects and partnerships include the *Munga Masongge Guåhan* "Don't Burn Guam" campaign, volunteer planting events during Arbor Month (October), Fire Prevention Week (also held in October), and the Fire Wise Club at Southern High School. FSRD staff also share information at joint outreach events such as Earth Day, UOG Charter Day, and World Oceans Day, usually accompanied by Smoky the Bear. Many of these activities are focused on young people and families. "Hopefully when people have this education in their childhood, it will decrease the amount of land destroyed by fires in the future," said Belmina Soliva, Forestry Stewardship Coordinator at FSRD. And as a result, FSRD's education and outreach efforts can protect our reefs for the future as well.

World Oceans Day

Celebrated across the world every year on June 8th, [World Oceans Day](#) is an opportunity to honor our oceans, which cover more than 70% of our planet and provide over half of the oxygen in our atmosphere. Oceans are also where we find coral reefs, highly diverse habitats that make up less than 1% of the seafloor but are home to over 25% of all life in the ocean.

GYOR partners were in full swing for World Oceans Day. In fact, we celebrated for an entire week. Starting on Monday, June 3rd, the Outrigger Guam Beach Resort hosted two reefscape craft nights for kids and an ocean critters cookie decorating event as part of their [OZONE Initiative](#). Outrigger also hosted a safe and sustainable marine tourism training for hotel staff, led by Mallory Morgan (BSP), and two training sessions for the [Eyes of the Reef Marianas](#) program, led by Whitney Hoot (BSP).

On Friday, Outrigger and GYOR partners recognized World Oceans Day with a mini-fair, introduction to snorkeling session in Tumon Bay, an ocean canvas paint party, and a beach clean-up. Locals and tourists wandered through the mini-fair booths, which were staffed by GYOR partners including BSP, FOR Guam, UOG's Center for Island Sustainability and Sea Grant, the National Park Service and Pacific Historic Parks, the Department of Agriculture, Underwater World, and Island Strong. Participants learned about reef-safe sunscreen, built coral polyps from play-dough and pipe cleaners, and played a game that showed them how to properly sort recyclables.

On Saturday, June 9th, Guam's [Micronesia Conservation Coalition](#) celebrated World Oceans Day with a public outreach event at the Micronesia Mall. Staff from government agencies, the University of Guam, Guam Community College, and non-profit organizations set up tables with interactive displays, activities, and crafts, including an origami fish. Many participants entered the hourly raffles and were thrilled to win sustainable prizes such as reusable produce bags and bamboo toothbrushes. At the GYOR booth, we focused on reducing impacts to coral reefs by encouraging people not to touch or step on corals, feed fish, or wear sunscreen products that are known to be harmful to marine life.



Photos: W. Hoot & M. Morgan/BSP



Upcoming Events

- USFWS Keep Guam Beautiful beach clean-up at Ritidian (7/7)
- DAWR's Kids Fishing Clinic (7/7) and Kids Fishing Derby (7/14)
- "Get to know wildfire in Guam" online webinar with FSRD (7/13)
- UOG Marine Lab's Predicting Extreme Tides Workshop (7/21)

For more details on upcoming events, visit our [website](#).

August's GYOR theme: Climate change on Guam

In the News

- BSP's Mallory Morgan on K57 discussing [coral reefs and tourism](#)
- Marine Mania's Linda Tatreau interviewed about [ocean plastic](#) in the Post
- FOR Guam's [community reef monitoring](#) in the PDN